



P-A-1346

**SYNTHESIS AND SORPTION PROPERTIES, TOWARDS SOME HEAVY METAL IONS, OF A NEW  
POLYSTYRENE-BASED TERPYRIDINE POLYMER**

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Sorption Properties of a Polystyrene Supported Schiff Base Resin, Toward Divalent Metal Ions  
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ABSTRACT: Heavy metals are commonly found in large quantities in industrial  
wastewaters. For this reason, the recovery of the metal ions present in these wastewaters is  
necessary for environmental protection and economical reasons. A new polystyrene-supported  
Schiff base resin, N,N-bis(salicylidene propylenetriamine) - aminomethyl polystyrene, has been synthesized through a reaction  
between the commercially available 4-chloromethyl polystyrene polymer and the Schiff base,  
N,N-disalicylidenepropylenetriamine. The chelation behavior of this resin toward the divalent  
metal ions Cu<sup>2+</sup>, Ni<sup>2+</sup>, Zn<sup>2+</sup>, and Pb<sup>2+</sup> in aqueous solutions was investigated. Batch  
equilibration experiments were carried out as a function of contact time, pH, amount of metal-  
ion, polymer mass, and temperature. The amount of metal-ion uptake of the polymers was  
determined by using atomic absorption spectrometry (AAS). Results of the study revealed that  
the resin exhibited higher capacities and a more pronounced adsorption toward Cu<sup>2+</sup> and that  
the metal-ion uptake follows the order: Cu<sup>2+</sup> > Zn<sup>2+</sup> > Ni<sup>2+</sup> > Pb<sup>2+</sup>. The adsorption and  
binding capacity of the resin toward the various metal ions investigated are discussed.  
Keywords: polystyrene, metal ions, Schiff base, sorption, atomic absorption, mass spectrometry  
Symposium B: Optics - Photonics & Thin Films